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09/911,840	07/23/2001	Scott Cumeralto	1725.123US02	3896

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EXAMINER	
TRAN, KHANH C	

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/911,840	CUMERALTO ET AL.	
	Examiner	Art Unit	
	Khanh Tran	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-10 and 13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-10 and 13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07/23/2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The Amendment filed on 10/27/2005 has been entered. Claims 8-10 and 13 are pending in this Office action.

Response to Arguments

2. Applicant's arguments with respect to claims 8-10 and 13 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kraus et al. U.S. Patent 6,804,559 in view of Markowitz et al. U.S. Patent 5,626,630.

Regarding claim 8, Kraus et al. invention is directed to an electro-medical implant comprising a telemetry device for the exchange of data with an external apparatus where the telemetry device comprises a transmitting device and a receiving device; see column 1 lines 35-45.

In column 15 line 60 via column 16 line 30, figure 7 illustrates an embodiment of a telemetry device of an electro-medical implant. The telemetry device includes energy

storage means 51 52, long-range transmitter 48, close-range transmitter 44, switching unit 46.1, a telemetry unit 45, antenna interface 46, switching unit 46.1, long-range antenna 49 and close-range antenna 47. The telemetry unit 45 further comprises intermediate storage means, operational control, encoding, decoding and driver with threshold detector.

In light of the foregoing disclosure, energy storage means 51 52, long-range transmitter 48, close-range transmitter 44, switching unit 46.1 and a telemetry unit 45 constitute the claimed digital subsystem. The antenna interface 46, switching unit 46.1, long-range antenna 49 and close-range antenna 47 constitute the claimed radio sub-system. In column 18 lines 40-60, Kraus et al. further teaches the implantable device is adapted to immediately charge up the power supply buffer capacitor, which is included in the energy storage means 51 52 for providing sufficient energy for the transmission of data prior to such transmission. The buffer capacitor as taught in Klaus et al. invention corresponds to the claimed charge pump capacitor and the energy storage means corresponds to the claimed battery.

Kraus et al. does not teach the telemetry device being coupled to a utility meter that forms part of a utility meter reading system as claimed in the application claim.

Nevertheless, in column 17 lines 1-20, Klaus et al. teaches another embodiment involving an external apparatus 2" that is suitable for monitoring, actuating, and transmitting data from various electronic apparatuses 1'. Uses of this systems can include the remote monitoring of installations, for example, the degree of filling of automatic drink dispensers or automatic vending machines; a link with domestic

technology, for example the control and monitoring of an air conditioning installation or a heating system; coupling to alarm installations or glass breakage signaling installations, for example burglary signaling by way of mobile radio; *coupling to measurement systems*, for example weather stations and level metering units on rivers; coupling to systems for traffic observation and control, for example traffic signs, bridges etc. Because Klaus et al. teachings can apply to *measurement systems* for remote monitoring of installations, it would have been obvious for one of ordinary skill in the art at the time the invention was made that Klaus et al. telemetry device can be modified to couple to a utility meter to form part of a utility meter reading system. Kraus et al. does not teach the telemetry device transmits data from the electro-medical implant using frequency hopping spread spectrum signal.

Markowitz et al. teaches a very similar system as illustrated in figures 1 and 2. In column 3 lines 15-40, the telemetry system allows a remote monitoring station 10 to communicate with implanted device 12 through repeater 14 and cellular telephone network 16. In column 3 lines 40-65, the telemetry system employs three different types of communication devices. The first type is a transponder 17 attached to the implanted device 12. The transponder 17 is an extremely low power device. In column 9 lines 20-35, Markowitz et al. further teaches that the repeater 14 communicates with the transponder 17 using frequency hopping or direct sequence spread spectrum.

Klaus et al. and Markowitz et al. teachings apply to a telemetry system for communicating between an electronic implanted device and a remote monitoring station. Because Markowitz et al. teachings employ frequency hopping or direct

sequence spread spectrum for communicating between the implanted device and the repeater, it would have been obvious for one of ordinary skill in the art at the time the invention was made that Klaus et al. telemetry device can be modified to employ frequency hopping or direct sequence spread spectrum as taught in Markowitz et al. invention.

Regarding claim 9, as recited in claim 8, in column 18 lines 40-60, Kraus et al. further teaches the implantable device is adapted to immediately charge up the power supply buffer capacitor for providing *sufficient energy* for transmission of data. In light of the foregoing, utilization of the buffer capacitor by the RF subsystem limits the drain on the energy storage means.

Regarding claim 10, referring to figure 7 of Kraus et al. invention, in column 16 lines 10-20, Kraus et al. teaches the telemetry unit 45 includes operational control, encoding, decoding. In view of that, the telemetry unit 45 corresponds to the claimed high-speed processor.

Krauss et al., however, does not teach a low-speed processor monitor the status of the battery and transfer the status of the battery to the high-speed processor as claimed.

Nevertheless, in column 18 lines 35-60, because Kraus et al. teaches the implantable device is adapted to immediately charge up the power supply buffer capacitor for providing sufficient energy for the transmission of data prior to the

transmission, it would have been obvious for one of ordinary skill in the art at the time the invention was made that Klaus et al. teachings can be modified to include another processor for monitoring the charging process and to inform the telemetry unit 45 sufficient energy for the transmission. Since the processor is employed for monitoring the charging process, the processor can be implemented as a low-speed processor.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glorioso et al. U.S. Patent 6,137,423 in view of Meyer et al. U.S. 6,778,099 B1 AND Argyroudis et al. U.S. Patent 5,748,104.

Regarding claim 13, figure 1 illustrates a system 10 including:

Multiple remote meter interfaces (RMIs) 12 for reading meters 14, each of RMIs 12 is connected to a meter 14 for reading meter information from the meter 14 and transmitting the information wirelessly to a base station 16 as shown in figure 1, see column 2 line 64 through column 3 line 9. In column 3 line 48 via column 4 line 7, Glorioso et al. teaches that the wireless signals between the RMIs 12, base stations 16, and the master station 21 in the system 10 of figure 1 are signal bursts, wherein during each signal burst, the carrier signal *frequency hops* in pseudo-random sequence through fifty of one-hundred twenty-eight designated frequency channels within the frequency range. Glorioso et al. further discloses that the round trip of the signal bursts is less than four-hundred milliseconds long in order to meet a Federal Communications commission (FCC)

regulation for spread spectrum communication. *In light of the foregoing disclosure*, the system 10 in figure 1 is a spread spectrum system corresponding to the claimed preamble "a spread spectrum meter reading system". The RMIs connected to meters 14, taught in Glorioso et al. invention, are equivalent to the claimed "plurality of end point encoder transmitter devices, each of which is connected to a utility meter". In regard to the claimed "high power frequency hopping spread spectrum signals", because the claim does not give a quantitative value for high power frequency hopping spread spectrum signal, it would have been obvious for one of ordinary skill in the art at the time the invention was made that the signal bursts, as defined in Glorioso et al. invention, are considered high power frequency hopping spread spectrum signals. The motivation is that the signal bursts comply with FCC regulation for spread spectrum communication, and hence, the signal bursts contain high enough power for transmission while complying with FCC regulation for spread spectrum communication;

a plurality of base stations 16 in figure 1, wherein the number of base stations 16 is less than the number of RMIs 12. Each of the base stations 16 concentrates the meter reading information from several of the RMIs 12 and then passes the information. In one embodiment, the base stations 16 act as *repeaters* to pass the meter reading information to a master station 21, see column 3 lines 10-37. From the foregoing teachings, the base stations 16, acting as repeaters, are equivalent to the claimed "plurality of intermediate transceiver

units", which receive and retransmit the meter reading information in the form of high power frequency hopping spread spectrum signal bursts.

In the embodiment of base stations 16 acting as repeaters as recited above, the base stations 16 pass the meter reading information to a master station 21. The master station 21 inherently has a receiver for receiving the meter reading information in the form of high power frequency hopping spread spectrum signal bursts, see column 3 lines 10-37. Glorioso et al. does not expressly teach a base station as set forth in the claimed application. However, because the master station 21 performs similar functions as the claimed station, the master station 21 is equivalent to the claimed "base station" for receiving high power frequency hopping spread spectrum signal bursts. Glorioso et al. further teaches that where the master station 21 is used, either or both of the base stations 16 and the master station 21 may concentrate the meter reading information. There may be more than one master station 21 in the system 10 shown in figure 1. In light of the foregoing disclosure, a plurality of master stations 21 corresponds to the claimed plurality of base stations. The master station 21 receives any meter reading information from any the RMI 12 as claimed in the application claim.

Glorioso et al. does not teach each of said plurality of buckets as set forth in the claimed invention.

Meyer et al. invention is directed to a communications module that permits remote meter reading of a utility meter via a wireless modem. In column 4, lines

15-20, see also figure 3. The meter 30 is typically read over the wireless network 80 at a predetermined time. The communication module 10 responds with the appropriate load profile data (e.g. for the previous 24 hours), time-of-use data, as well as any other data stored in the meter 30. In light of Meyer et al. teachings, the load profile data represents sequential period of time of consumption data as measured from the current time of the meter as claimed.

Glorioso et al. and Meyer et al. teachings are in the same field of endeavor. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention that Glorioso et al. can be modified to include Meyer et al. teachings as discussed above. Motivation is that profile data is kept for a previous predetermined period of time for verification purposes and for determining user usage profile for future planning.

Glorioso et al. does not expressly teach the base unit utilizing time and frequency collision avoidance scheme in combination with the bucket transmission.

Argyroudis et al. discusses (in column 7 line 60 via column 8 line 45) techiniques for avoiding collisions between competing remote metering units 102a-102n. For example, the transmitting remote metering unit 102a-102n randomly chooses a pseudo-noise (PN) time alignment from a set of available PN time alignments. Referring back to Glorioso et al. invention, in column 3 lines 45-65, Glorioso et al. teaches wireless signals between base station, master station and RMI 12 being frequency hopping signal using a pseudo-random

sequence through fifty of one-hundred twenty-eight designated frequency channels within the frequency range. Furthermore, in column 5 lines 5-15, the base station 40 receives a wireless data signal and transmits a wireless data return signal to one of the scheduled RMIs 23-24 during each of the scheduled time segments. Because Glorioso et al. teaches utilization of frequency hopping and scheduled time segments, one of ordinary skill in the art would have recognized that Glorioso et al. teachings correspond to utilization of the time and frequency collision avoidance scheme as claimed in the application claim.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Krauss et al. U.S. Patent 6,574,509 B1 discloses "Apparatus For The Transmission Of Data In Particular From An Electro-medical Implant".

Krauss et al. U.S. Patent 6,574,509 B1 discloses "Method and Apparatus For Data Transmission Between An Electro-medical Implant And An External Apparatus".

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KCT Khanh Cong Tran 01/06/2006

Examiner KHANH TRAN